



## wwPDB EM Validation Summary Report ⓘ

Sep 13, 2023 – 10:11 AM EDT

PDB ID : 8D9X  
EMDB ID : EMD-27269  
Title : Cryo-EM structure of human DELE1 in oligomeric form  
Authors : Yang, J.; Lander, G.C.  
Deposited on : 2022-06-11  
Resolution : 3.80 Å (reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev50  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.35.1

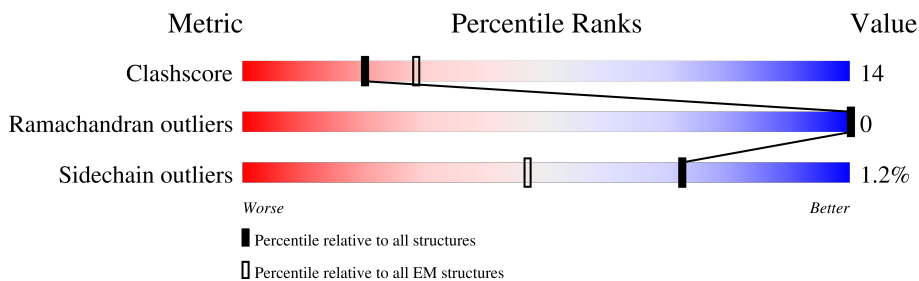
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.80 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	675	23% 8% 69%
1	B	675	21% 10% 69%
1	C	675	24% 7% 69%
1	D	675	24% 7% 69%
1	E	675	21% 9% 69%
1	F	675	24% 8% 69%
1	G	675	22% 9% 69%
1	H	675	22% 9% 69%

## 2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 12670 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Maltodextrin-binding protein,DAP3-binding cell death enhancer 1 short form.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	210	1585	994	287	298	6	0	0
1	B	210	1576	988	284	298	6	0	0
1	C	210	1585	994	287	298	6	0	0
1	D	210	1584	993	287	298	6	0	0
1	E	210	1585	994	287	298	6	0	0
1	F	210	1585	994	287	298	6	0	0
1	G	210	1585	994	287	298	6	0	0
1	H	210	1585	994	287	298	6	0	0

There are 216 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-147	MET	-	initiating methionine	UNP A0A376KDN7
A	-65	ALA	ASP	conflict	UNP A0A376KDN7
A	-64	ALA	LYS	conflict	UNP A0A376KDN7
A	25	ALA	GLU	conflict	UNP A0A376KDN7
A	26	ALA	ASN	conflict	UNP A0A376KDN7
A	92	ALA	LYS	conflict	UNP A0A376KDN7
A	215	ALA	-	linker	UNP A0A376KDN7
A	216	ALA	-	linker	UNP A0A376KDN7
A	217	ALA	-	linker	UNP A0A376KDN7
A	218	GLN	-	linker	UNP A0A376KDN7
A	219	THR	-	linker	UNP A0A376KDN7
A	220	ASN	-	linker	UNP A0A376KDN7
A	221	ALA	-	linker	UNP A0A376KDN7

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Chain	Residue	Modelled	Actual	Comment	Reference
A	222	VAL	-	linker	UNP A0A376KDN7
A	223	ASP	-	linker	UNP A0A376KDN7
A	516	SER	-	expression tag	UNP Q14154
A	517	ALA	-	expression tag	UNP Q14154
A	518	ALA	-	expression tag	UNP Q14154
A	519	ALA	-	expression tag	UNP Q14154
A	520	LEU	-	expression tag	UNP Q14154
A	521	GLU	-	expression tag	UNP Q14154
A	522	HIS	-	expression tag	UNP Q14154
A	523	HIS	-	expression tag	UNP Q14154
A	524	HIS	-	expression tag	UNP Q14154
A	525	HIS	-	expression tag	UNP Q14154
A	526	HIS	-	expression tag	UNP Q14154
A	527	HIS	-	expression tag	UNP Q14154
B	-147	MET	-	initiating methionine	UNP A0A376KDN7
B	-65	ALA	ASP	conflict	UNP A0A376KDN7
B	-64	ALA	LYS	conflict	UNP A0A376KDN7
B	25	ALA	GLU	conflict	UNP A0A376KDN7
B	26	ALA	ASN	conflict	UNP A0A376KDN7
B	92	ALA	LYS	conflict	UNP A0A376KDN7
B	215	ALA	-	linker	UNP A0A376KDN7
B	216	ALA	-	linker	UNP A0A376KDN7
B	217	ALA	-	linker	UNP A0A376KDN7
B	218	GLN	-	linker	UNP A0A376KDN7
B	219	THR	-	linker	UNP A0A376KDN7
B	220	ASN	-	linker	UNP A0A376KDN7
B	221	ALA	-	linker	UNP A0A376KDN7
B	222	VAL	-	linker	UNP A0A376KDN7
B	223	ASP	-	linker	UNP A0A376KDN7
B	516	SER	-	expression tag	UNP Q14154
B	517	ALA	-	expression tag	UNP Q14154
B	518	ALA	-	expression tag	UNP Q14154
B	519	ALA	-	expression tag	UNP Q14154
B	520	LEU	-	expression tag	UNP Q14154
B	521	GLU	-	expression tag	UNP Q14154
B	522	HIS	-	expression tag	UNP Q14154
B	523	HIS	-	expression tag	UNP Q14154
B	524	HIS	-	expression tag	UNP Q14154
B	525	HIS	-	expression tag	UNP Q14154
B	526	HIS	-	expression tag	UNP Q14154
B	527	HIS	-	expression tag	UNP Q14154
C	-147	MET	-	initiating methionine	UNP A0A376KDN7

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-65	ALA	ASP	conflict	UNP A0A376KDN7
C	-64	ALA	LYS	conflict	UNP A0A376KDN7
C	25	ALA	GLU	conflict	UNP A0A376KDN7
C	26	ALA	ASN	conflict	UNP A0A376KDN7
C	92	ALA	LYS	conflict	UNP A0A376KDN7
C	215	ALA	-	linker	UNP A0A376KDN7
C	216	ALA	-	linker	UNP A0A376KDN7
C	217	ALA	-	linker	UNP A0A376KDN7
C	218	GLN	-	linker	UNP A0A376KDN7
C	219	THR	-	linker	UNP A0A376KDN7
C	220	ASN	-	linker	UNP A0A376KDN7
C	221	ALA	-	linker	UNP A0A376KDN7
C	222	VAL	-	linker	UNP A0A376KDN7
C	223	ASP	-	linker	UNP A0A376KDN7
C	516	SER	-	expression tag	UNP Q14154
C	517	ALA	-	expression tag	UNP Q14154
C	518	ALA	-	expression tag	UNP Q14154
C	519	ALA	-	expression tag	UNP Q14154
C	520	LEU	-	expression tag	UNP Q14154
C	521	GLU	-	expression tag	UNP Q14154
C	522	HIS	-	expression tag	UNP Q14154
C	523	HIS	-	expression tag	UNP Q14154
C	524	HIS	-	expression tag	UNP Q14154
C	525	HIS	-	expression tag	UNP Q14154
C	526	HIS	-	expression tag	UNP Q14154
C	527	HIS	-	expression tag	UNP Q14154
D	-147	MET	-	initiating methionine	UNP A0A376KDN7
D	-65	ALA	ASP	conflict	UNP A0A376KDN7
D	-64	ALA	LYS	conflict	UNP A0A376KDN7
D	25	ALA	GLU	conflict	UNP A0A376KDN7
D	26	ALA	ASN	conflict	UNP A0A376KDN7
D	92	ALA	LYS	conflict	UNP A0A376KDN7
D	215	ALA	-	linker	UNP A0A376KDN7
D	216	ALA	-	linker	UNP A0A376KDN7
D	217	ALA	-	linker	UNP A0A376KDN7
D	218	GLN	-	linker	UNP A0A376KDN7
D	219	THR	-	linker	UNP A0A376KDN7
D	220	ASN	-	linker	UNP A0A376KDN7
D	221	ALA	-	linker	UNP A0A376KDN7
D	222	VAL	-	linker	UNP A0A376KDN7
D	223	ASP	-	linker	UNP A0A376KDN7
D	516	SER	-	expression tag	UNP Q14154

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Chain	Residue	Modelled	Actual	Comment	Reference
D	517	ALA	-	expression tag	UNP Q14154
D	518	ALA	-	expression tag	UNP Q14154
D	519	ALA	-	expression tag	UNP Q14154
D	520	LEU	-	expression tag	UNP Q14154
D	521	GLU	-	expression tag	UNP Q14154
D	522	HIS	-	expression tag	UNP Q14154
D	523	HIS	-	expression tag	UNP Q14154
D	524	HIS	-	expression tag	UNP Q14154
D	525	HIS	-	expression tag	UNP Q14154
D	526	HIS	-	expression tag	UNP Q14154
D	527	HIS	-	expression tag	UNP Q14154
E	-147	MET	-	initiating methionine	UNP A0A376KDN7
E	-65	ALA	ASP	conflict	UNP A0A376KDN7
E	-64	ALA	LYS	conflict	UNP A0A376KDN7
E	25	ALA	GLU	conflict	UNP A0A376KDN7
E	26	ALA	ASN	conflict	UNP A0A376KDN7
E	92	ALA	LYS	conflict	UNP A0A376KDN7
E	215	ALA	-	linker	UNP A0A376KDN7
E	216	ALA	-	linker	UNP A0A376KDN7
E	217	ALA	-	linker	UNP A0A376KDN7
E	218	GLN	-	linker	UNP A0A376KDN7
E	219	THR	-	linker	UNP A0A376KDN7
E	220	ASN	-	linker	UNP A0A376KDN7
E	221	ALA	-	linker	UNP A0A376KDN7
E	222	VAL	-	linker	UNP A0A376KDN7
E	223	ASP	-	linker	UNP A0A376KDN7
E	516	SER	-	expression tag	UNP Q14154
E	517	ALA	-	expression tag	UNP Q14154
E	518	ALA	-	expression tag	UNP Q14154
E	519	ALA	-	expression tag	UNP Q14154
E	520	LEU	-	expression tag	UNP Q14154
E	521	GLU	-	expression tag	UNP Q14154
E	522	HIS	-	expression tag	UNP Q14154
E	523	HIS	-	expression tag	UNP Q14154
E	524	HIS	-	expression tag	UNP Q14154
E	525	HIS	-	expression tag	UNP Q14154
E	526	HIS	-	expression tag	UNP Q14154
E	527	HIS	-	expression tag	UNP Q14154
F	-147	MET	-	initiating methionine	UNP A0A376KDN7
F	-65	ALA	ASP	conflict	UNP A0A376KDN7
F	-64	ALA	LYS	conflict	UNP A0A376KDN7
F	25	ALA	GLU	conflict	UNP A0A376KDN7

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Chain	Residue	Modelled	Actual	Comment	Reference
F	26	ALA	ASN	conflict	UNP A0A376KDN7
F	92	ALA	LYS	conflict	UNP A0A376KDN7
F	215	ALA	-	linker	UNP A0A376KDN7
F	216	ALA	-	linker	UNP A0A376KDN7
F	217	ALA	-	linker	UNP A0A376KDN7
F	218	GLN	-	linker	UNP A0A376KDN7
F	219	THR	-	linker	UNP A0A376KDN7
F	220	ASN	-	linker	UNP A0A376KDN7
F	221	ALA	-	linker	UNP A0A376KDN7
F	222	VAL	-	linker	UNP A0A376KDN7
F	223	ASP	-	linker	UNP A0A376KDN7
F	516	SER	-	expression tag	UNP Q14154
F	517	ALA	-	expression tag	UNP Q14154
F	518	ALA	-	expression tag	UNP Q14154
F	519	ALA	-	expression tag	UNP Q14154
F	520	LEU	-	expression tag	UNP Q14154
F	521	GLU	-	expression tag	UNP Q14154
F	522	HIS	-	expression tag	UNP Q14154
F	523	HIS	-	expression tag	UNP Q14154
F	524	HIS	-	expression tag	UNP Q14154
F	525	HIS	-	expression tag	UNP Q14154
F	526	HIS	-	expression tag	UNP Q14154
F	527	HIS	-	expression tag	UNP Q14154
G	-147	MET	-	initiating methionine	UNP A0A376KDN7
G	-65	ALA	ASP	conflict	UNP A0A376KDN7
G	-64	ALA	LYS	conflict	UNP A0A376KDN7
G	25	ALA	GLU	conflict	UNP A0A376KDN7
G	26	ALA	ASN	conflict	UNP A0A376KDN7
G	92	ALA	LYS	conflict	UNP A0A376KDN7
G	215	ALA	-	linker	UNP A0A376KDN7
G	216	ALA	-	linker	UNP A0A376KDN7
G	217	ALA	-	linker	UNP A0A376KDN7
G	218	GLN	-	linker	UNP A0A376KDN7
G	219	THR	-	linker	UNP A0A376KDN7
G	220	ASN	-	linker	UNP A0A376KDN7
G	221	ALA	-	linker	UNP A0A376KDN7
G	222	VAL	-	linker	UNP A0A376KDN7
G	223	ASP	-	linker	UNP A0A376KDN7
G	516	SER	-	expression tag	UNP Q14154
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G	518	ALA	-	expression tag	UNP Q14154
G	519	ALA	-	expression tag	UNP Q14154

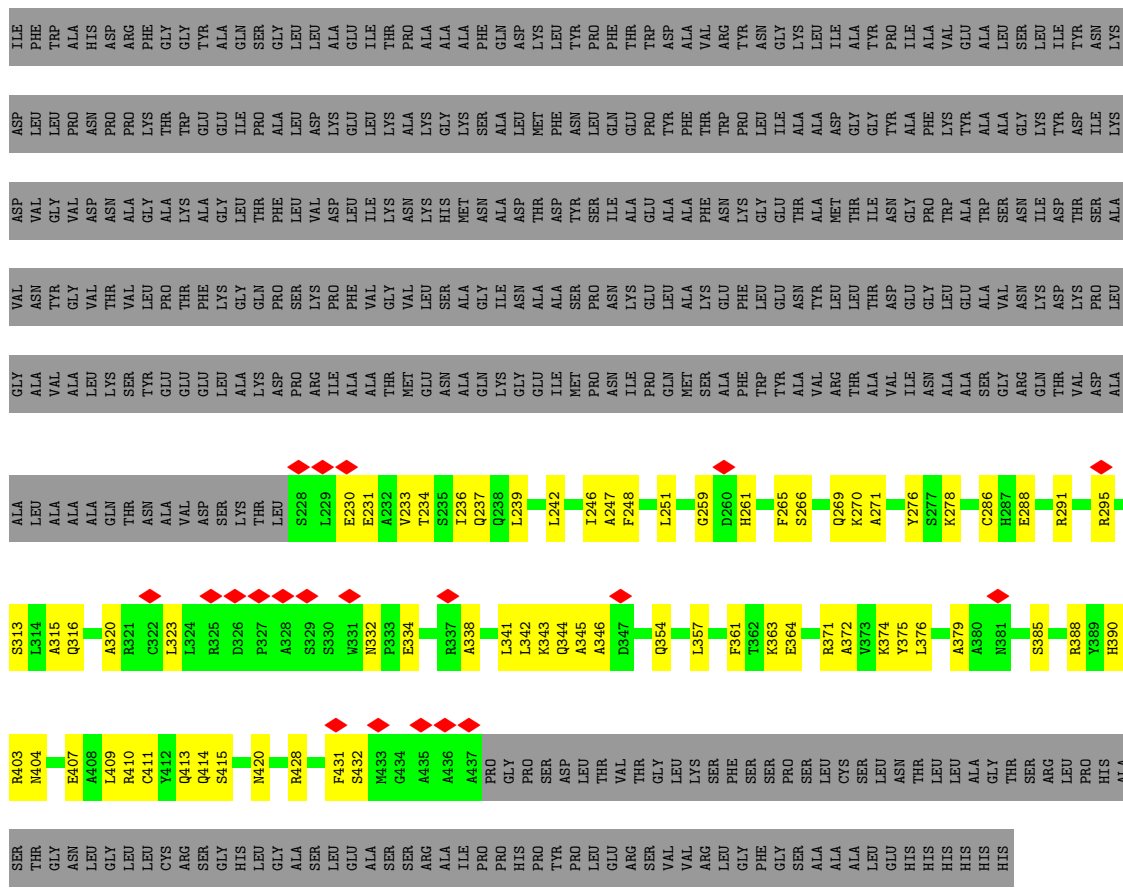
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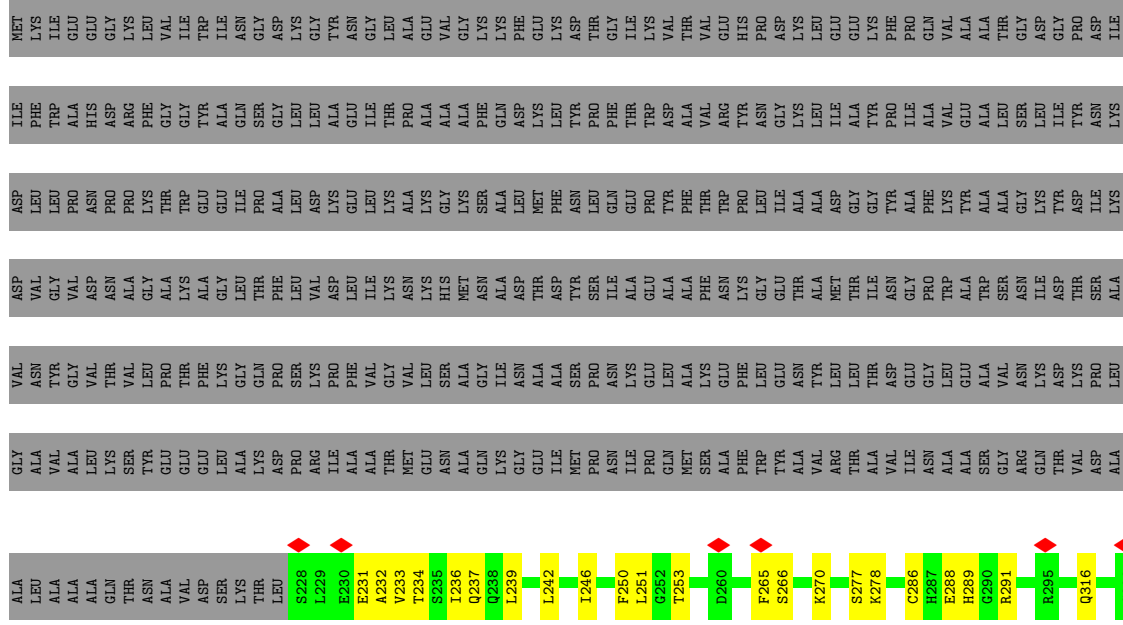
Chain	Residue	Modelled	Actual	Comment	Reference
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G	521	GLU	-	expression tag	UNP Q14154
G	522	HIS	-	expression tag	UNP Q14154
G	523	HIS	-	expression tag	UNP Q14154
G	524	HIS	-	expression tag	UNP Q14154
G	525	HIS	-	expression tag	UNP Q14154
G	526	HIS	-	expression tag	UNP Q14154
G	527	HIS	-	expression tag	UNP Q14154
H	-147	MET	-	initiating methionine	UNP A0A376KDN7
H	-65	ALA	ASP	conflict	UNP A0A376KDN7
H	-64	ALA	LYS	conflict	UNP A0A376KDN7
H	25	ALA	GLU	conflict	UNP A0A376KDN7
H	26	ALA	ASN	conflict	UNP A0A376KDN7
H	92	ALA	LYS	conflict	UNP A0A376KDN7
H	215	ALA	-	linker	UNP A0A376KDN7
H	216	ALA	-	linker	UNP A0A376KDN7
H	217	ALA	-	linker	UNP A0A376KDN7
H	218	GLN	-	linker	UNP A0A376KDN7
H	219	THR	-	linker	UNP A0A376KDN7
H	220	ASN	-	linker	UNP A0A376KDN7
H	221	ALA	-	linker	UNP A0A376KDN7
H	222	VAL	-	linker	UNP A0A376KDN7
H	223	ASP	-	linker	UNP A0A376KDN7
H	516	SER	-	expression tag	UNP Q14154
H	517	ALA	-	expression tag	UNP Q14154
H	518	ALA	-	expression tag	UNP Q14154
H	519	ALA	-	expression tag	UNP Q14154
H	520	LEU	-	expression tag	UNP Q14154
H	521	GLU	-	expression tag	UNP Q14154
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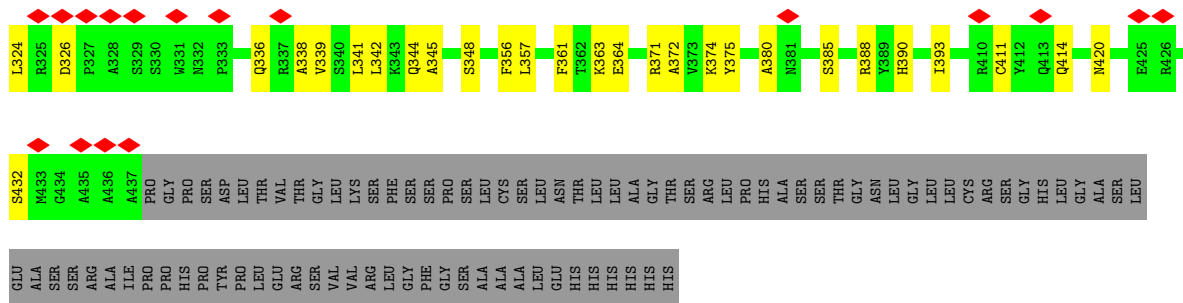




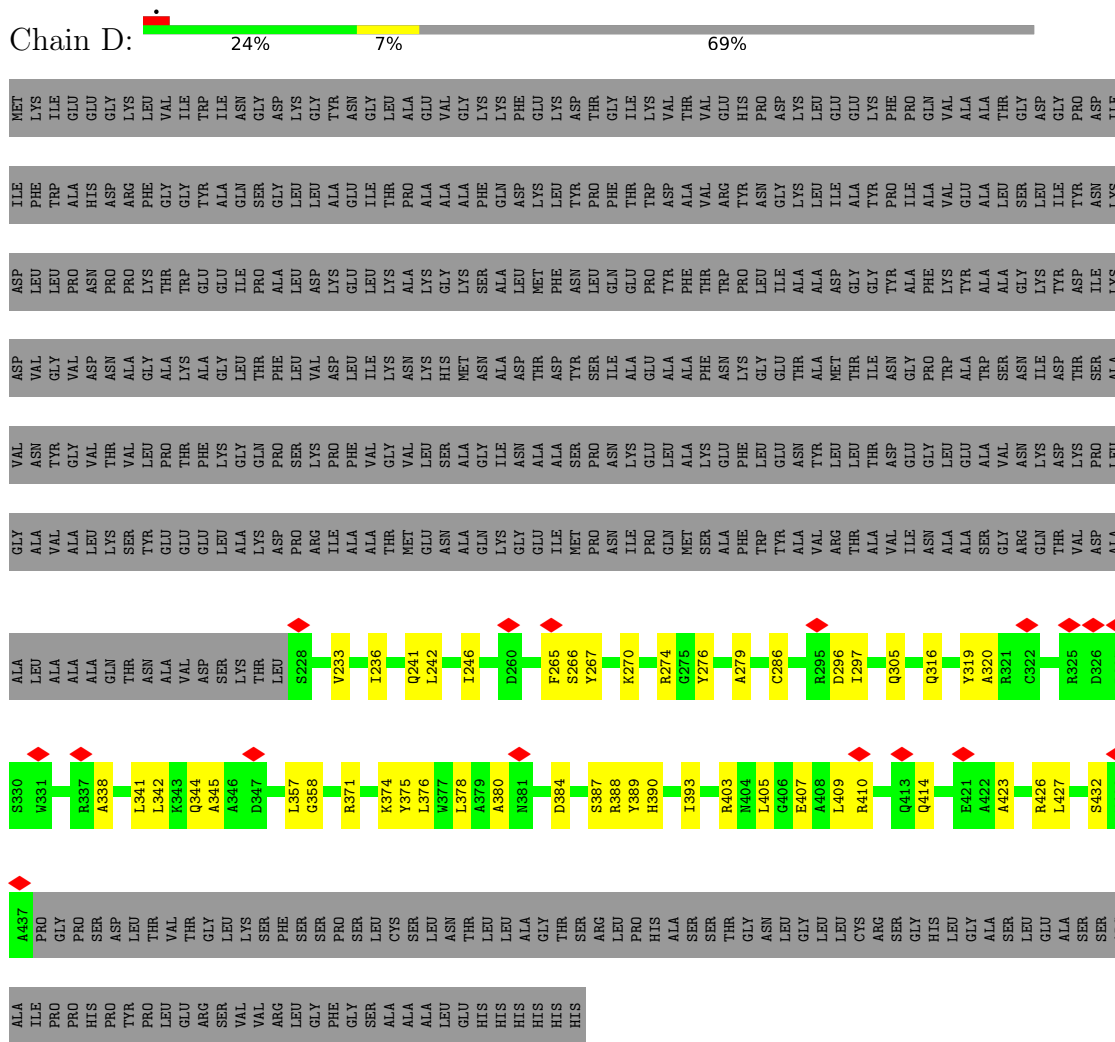


● Molecule 1: Maltodextrin-binding protein, DAP3-binding cell death enhancer 1 short form

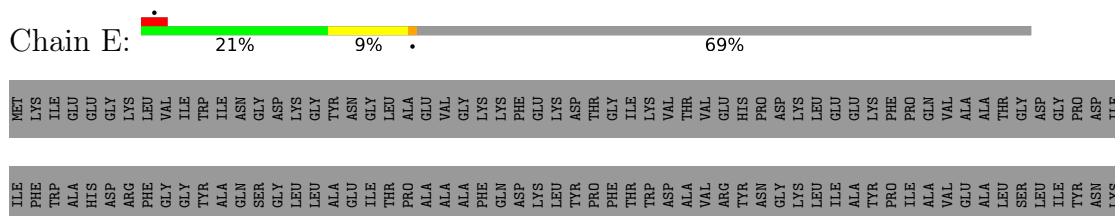


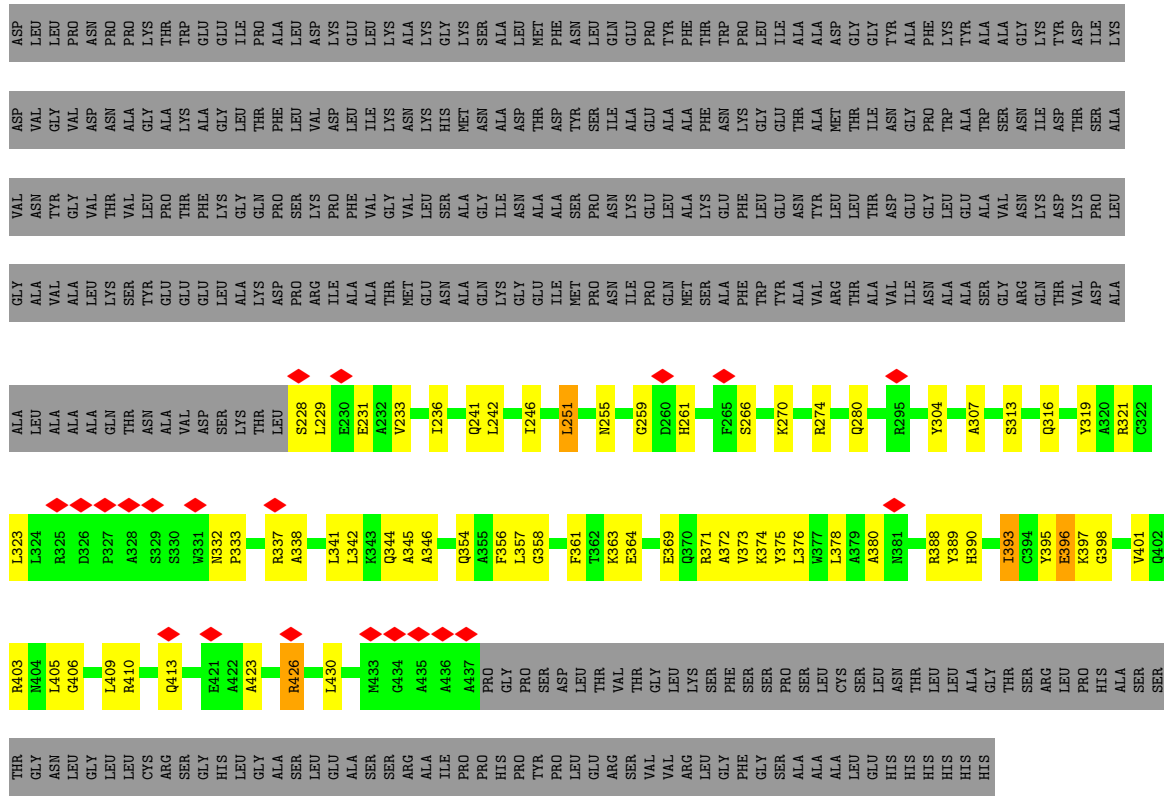


● Molecule 1: Maltodextrin-binding protein,DAP3-binding cell death enhancer 1 short form

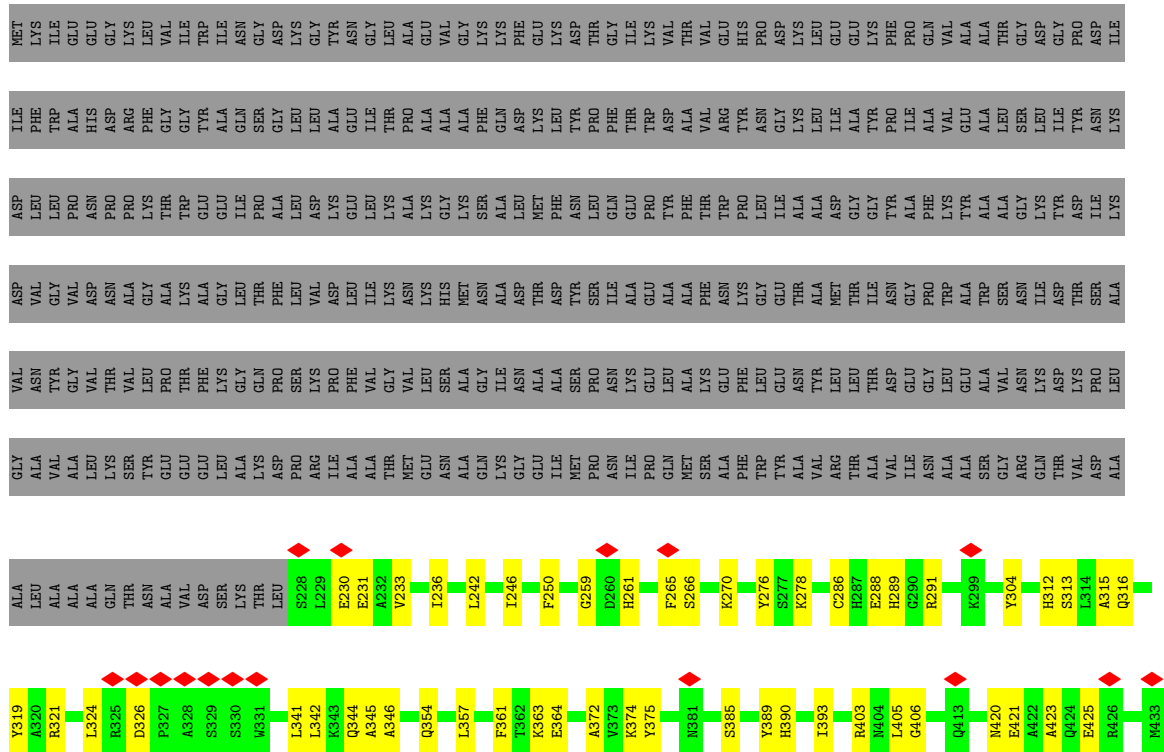


● Molecule 1: Maltodextrin-binding protein,DAP3-binding cell death enhancer 1 short form





● Molecule 1: Maltodextrin-binding protein,DAP3-binding cell death enhancer 1 short form





ASP VAL  
VAL ASN  
GLY TYR  
VAL VAL  
VAL ASP  
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Y304  
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Y319  
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C322  
L323  
L324  
R325  
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H331  
H332  
P333  
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E364  
E369  
Q370  
R371  
A372  
V373  
K374  
Y375  
L376  
K377  
L378  
A379  
A380  
R388  
Y389  
H390  
I393  
C394  
Y395  
E396  
K397  
C398  
L399  
G400  
V401  
Q402  
R403  
W404  
L405

L409  
R410  
Q413  
E421  
A422  
A423  
R426  
S432  
M433  
G434  
A435  
A436  
A437  
PRO  
GLY  
PRO  
SER  
PRO  
ASP  
LEU  
LEU  
THR  
VAL  
THR  
GLY  
LEU  
LYS  
SER  
PHE  
SER  
SER  
PRO  
ALA  
LEU  
ALA  
CYS  
SER  
LEU  
ASN  
THR  
LEU  
LEU  
ALA  
ALA  
GLY  
THR  
SER  
ARG  
LEU  
PRO  
HIS  
ALA  
SER  
SER  
THR  
GLY  
ASN  
LEU  
GLY  
LEU

LEU  
CYS  
ARG  
SER  
GLY  
HIS  
LEU  
GLY  
ALA  
SER  
LEU  
GLU  
ALA  
SER  
SER  
ARG  
ALA  
ILE  
PRO  
PRO  
HIS  
GLY  
TYR  
PRO  
LEU  
LEU  
GLU  
ARG  
VAL  
VAL  
ARG  
LEU  
GLY  
PHE  
GLY  
SER  
SER  
ALA  
ALA  
LEU  
LEU  
GLU  
HIS  
HIS  
HIS  
HIS

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D4	Depositor
Number of particles used	92455	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	1300	Depositor
Magnification	43478	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.763	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.025	Depositor
Recommended contour level	0.1	Depositor
Map size ( $\text{\AA}$ )	294.4, 294.4, 294.4	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.15, 1.15, 1.15	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.28	0/1615	0.51	0/2183
1	B	0.30	0/1606	0.53	0/2172
1	C	0.37	0/1615	0.52	0/2183
1	D	0.27	0/1614	0.51	0/2181
1	E	0.36	0/1615	0.53	0/2183
1	F	0.28	0/1615	0.52	0/2183
1	G	0.31	0/1615	0.50	0/2183
1	H	0.31	0/1615	0.51	0/2183
All	All	0.31	0/12910	0.52	0/17451

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1585	0	1518	43	0
1	B	1576	0	1498	56	0
1	C	1585	0	1518	38	0
1	D	1584	0	1514	44	0
1	E	1585	0	1518	64	0
1	F	1585	0	1518	32	0
1	G	1585	0	1518	46	0
1	H	1585	0	1518	44	0

*Continued on next page...*



Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	12670	0	12120	340	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 14.

The worst 5 of 340 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:393:ILE:HD11	1:E:397:LYS:HE2	1.41	1.02
1:A:409:LEU:HD23	1:E:406:GLY:HA2	1.56	0.88
1:E:393:ILE:HD11	1:E:397:LYS:HG3	1.55	0.87
1:E:393:ILE:CD1	1:E:397:LYS:HE2	2.07	0.84
1:C:250:PHE:HE2	1:D:242:LEU:HD23	1.46	0.81

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	208/675 (31%)	202 (97%)	6 (3%)	0	100	100
1	B	208/675 (31%)	199 (96%)	9 (4%)	0	100	100
1	C	208/675 (31%)	197 (95%)	11 (5%)	0	100	100
1	D	208/675 (31%)	203 (98%)	5 (2%)	0	100	100
1	E	208/675 (31%)	201 (97%)	7 (3%)	0	100	100
1	F	208/675 (31%)	200 (96%)	8 (4%)	0	100	100
1	G	208/675 (31%)	196 (94%)	12 (6%)	0	100	100
1	H	208/675 (31%)	201 (97%)	7 (3%)	0	100	100
All	All	1664/5400 (31%)	1599 (96%)	65 (4%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	152/528 (29%)	148 (97%)	4 (3%)	46	69
1	B	150/528 (28%)	150 (100%)	0	100	100
1	C	152/528 (29%)	151 (99%)	1 (1%)	84	91
1	D	152/528 (29%)	152 (100%)	0	100	100
1	E	152/528 (29%)	147 (97%)	5 (3%)	38	65
1	F	152/528 (29%)	151 (99%)	1 (1%)	84	91
1	G	152/528 (29%)	151 (99%)	1 (1%)	84	91
1	H	152/528 (29%)	149 (98%)	3 (2%)	55	75
All	All	1214/4224 (29%)	1199 (99%)	15 (1%)	72	84

5 of 15 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	393	ILE
1	H	321	ARG
1	E	396	GLU
1	H	426	ARG
1	G	251	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
1	F	344	GLN
1	G	255	ASN
1	H	413	GLN
1	H	316	GLN
1	E	344	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

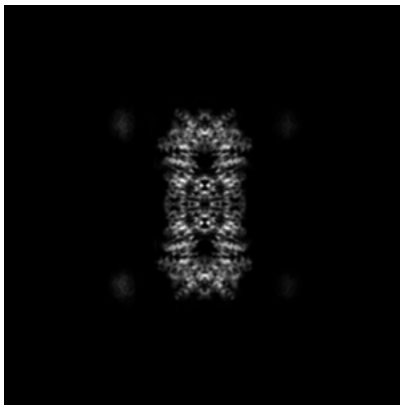
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-27269. These allow visual inspection of the internal detail of the map and identification of artifacts.

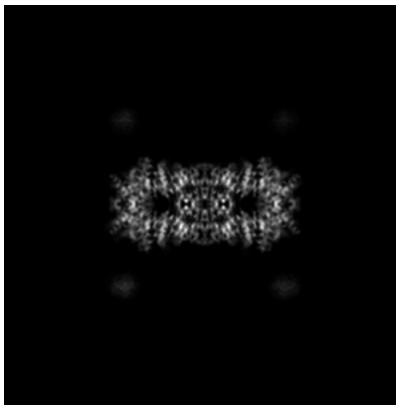
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

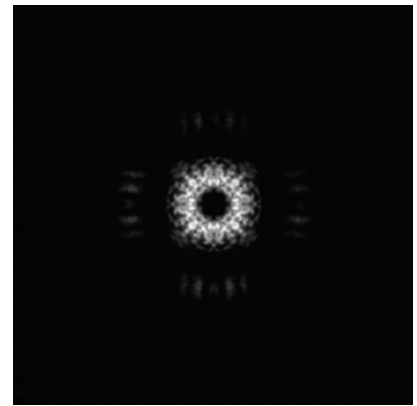
#### 6.1.1 Primary map



X

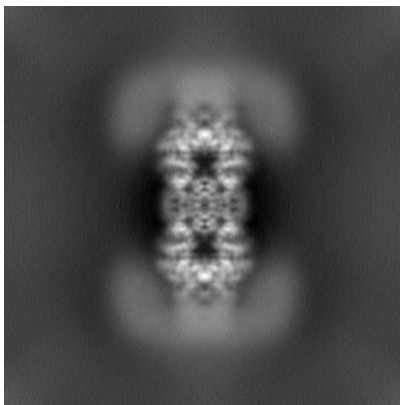


Y

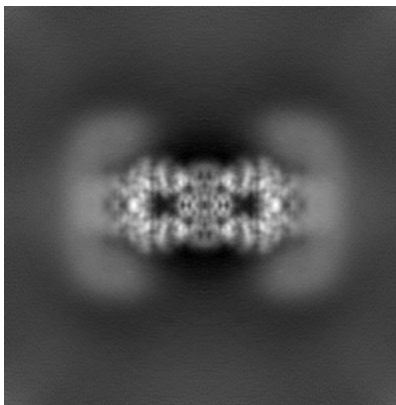


Z

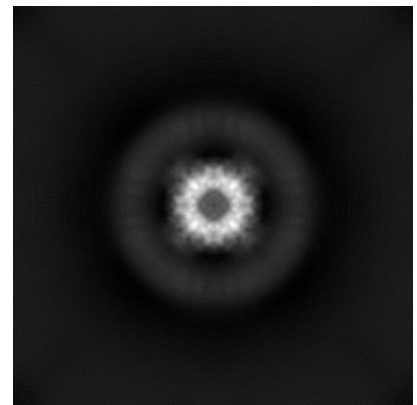
#### 6.1.2 Raw map



X



Y

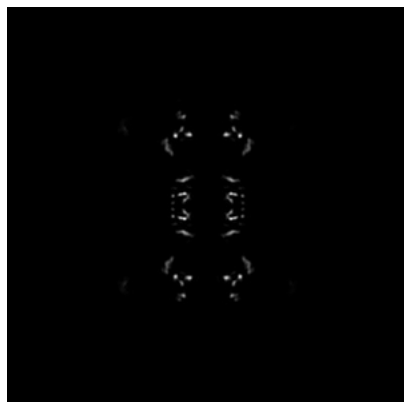


Z

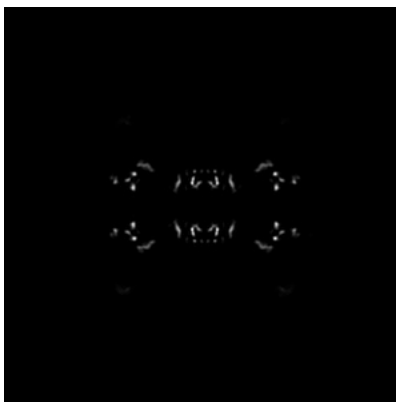
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

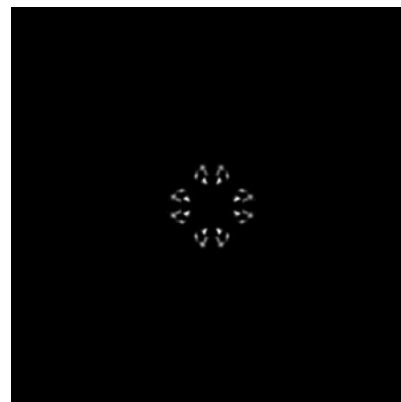
### 6.2.1 Primary map



X Index: 128

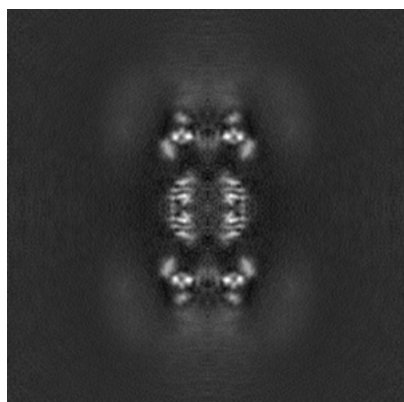


Y Index: 128

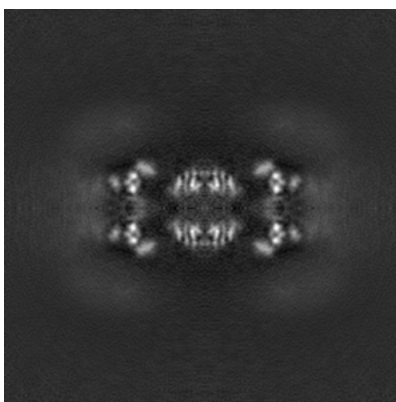


Z Index: 128

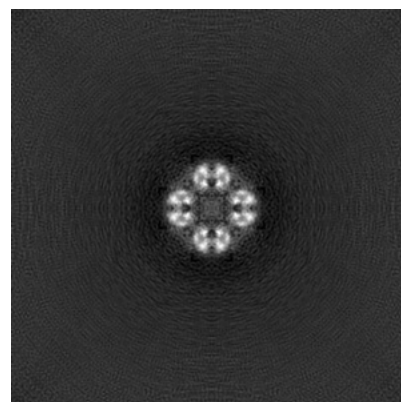
### 6.2.2 Raw map



X Index: 128



Y Index: 128



Z Index: 128

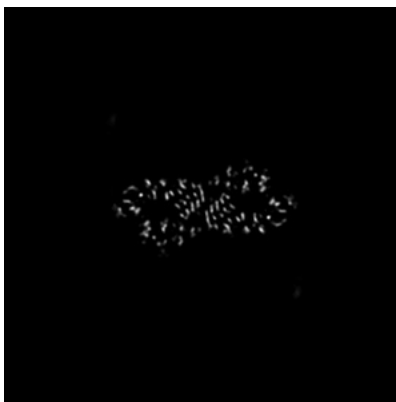
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

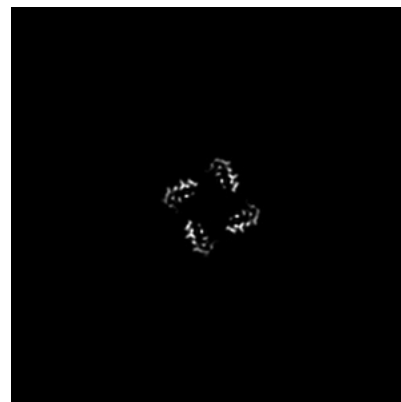
### 6.3.1 Primary map



X Index: 113

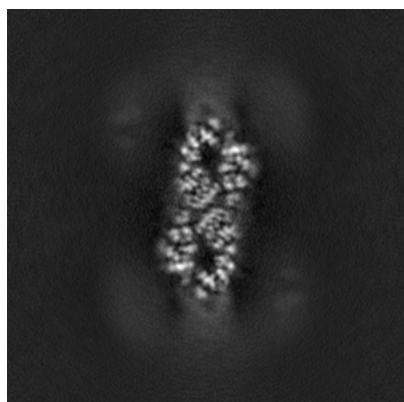


Y Index: 114

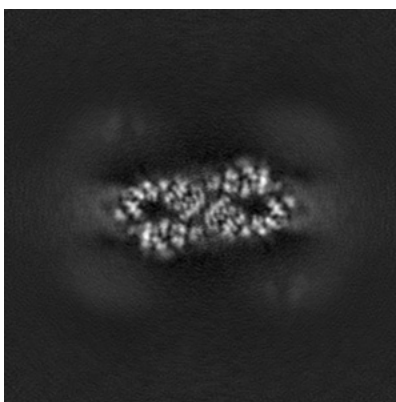


Z Index: 165

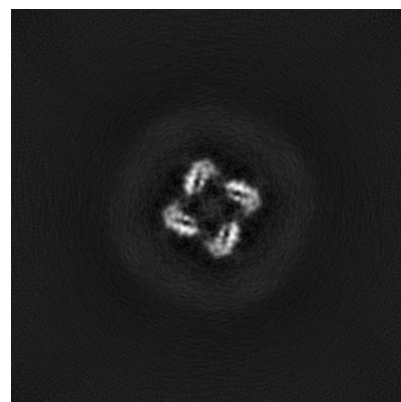
### 6.3.2 Raw map



X Index: 141



Y Index: 115

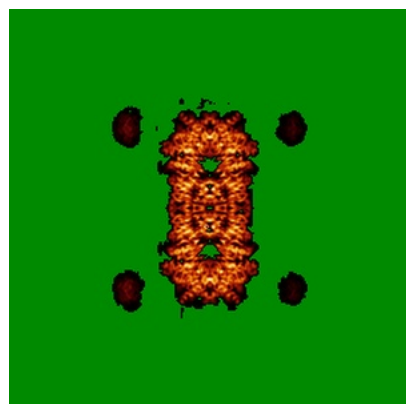


Z Index: 91

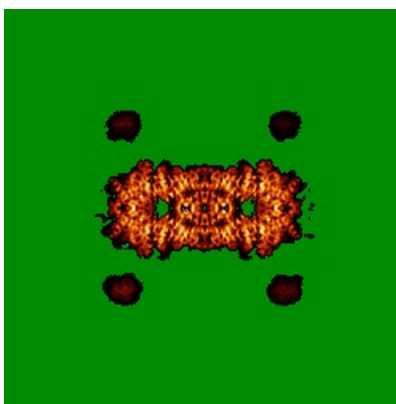
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

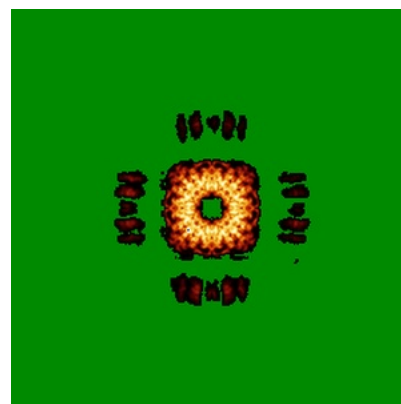
### 6.4.1 Primary map



X

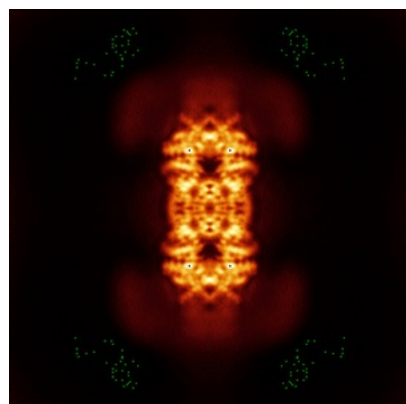


Y

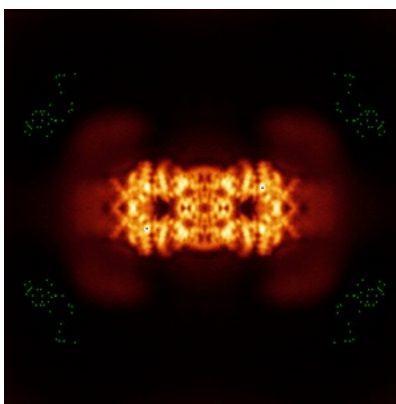


Z

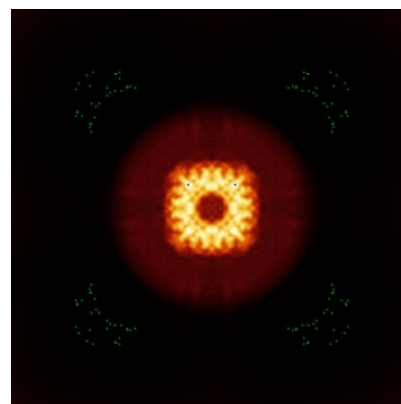
### 6.4.2 Raw map



X



Y

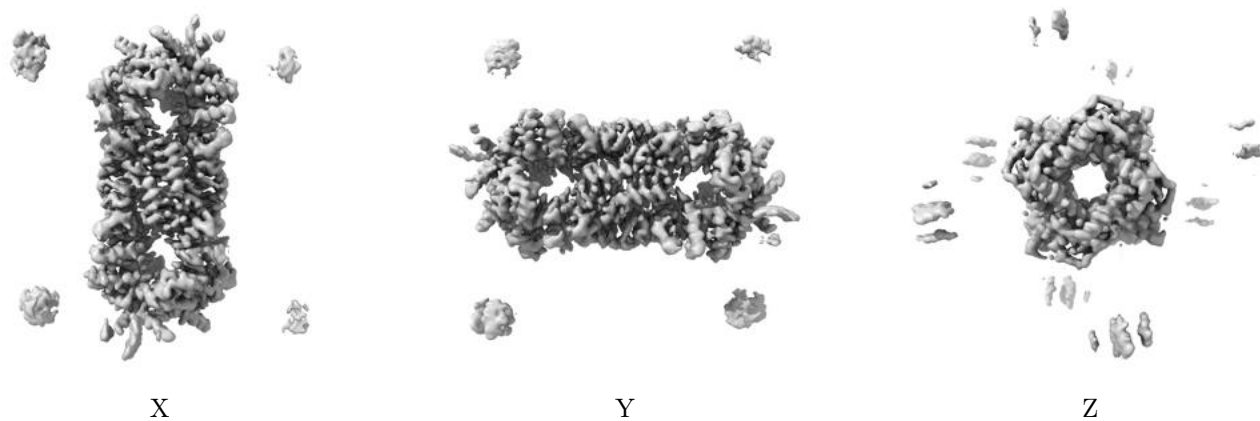


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

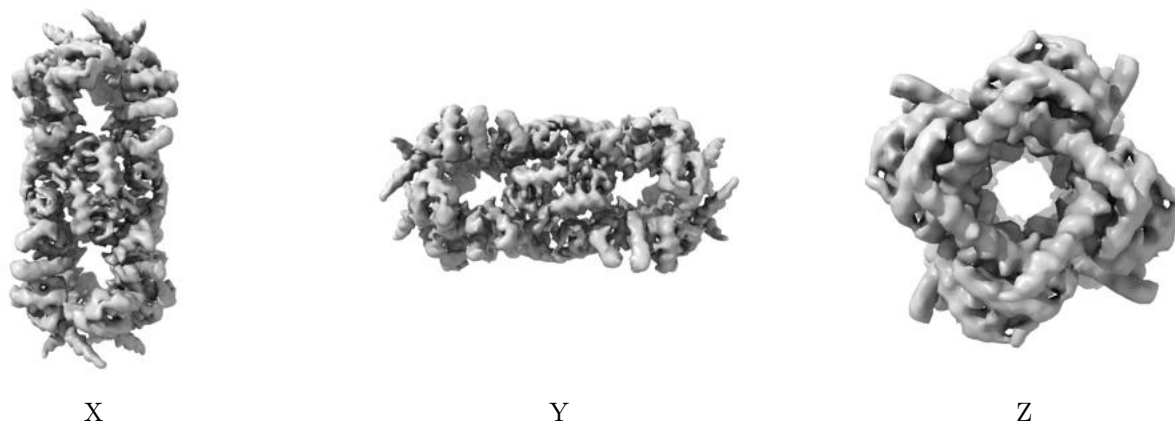
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

## 6.6 Mask visualisation [i](#)

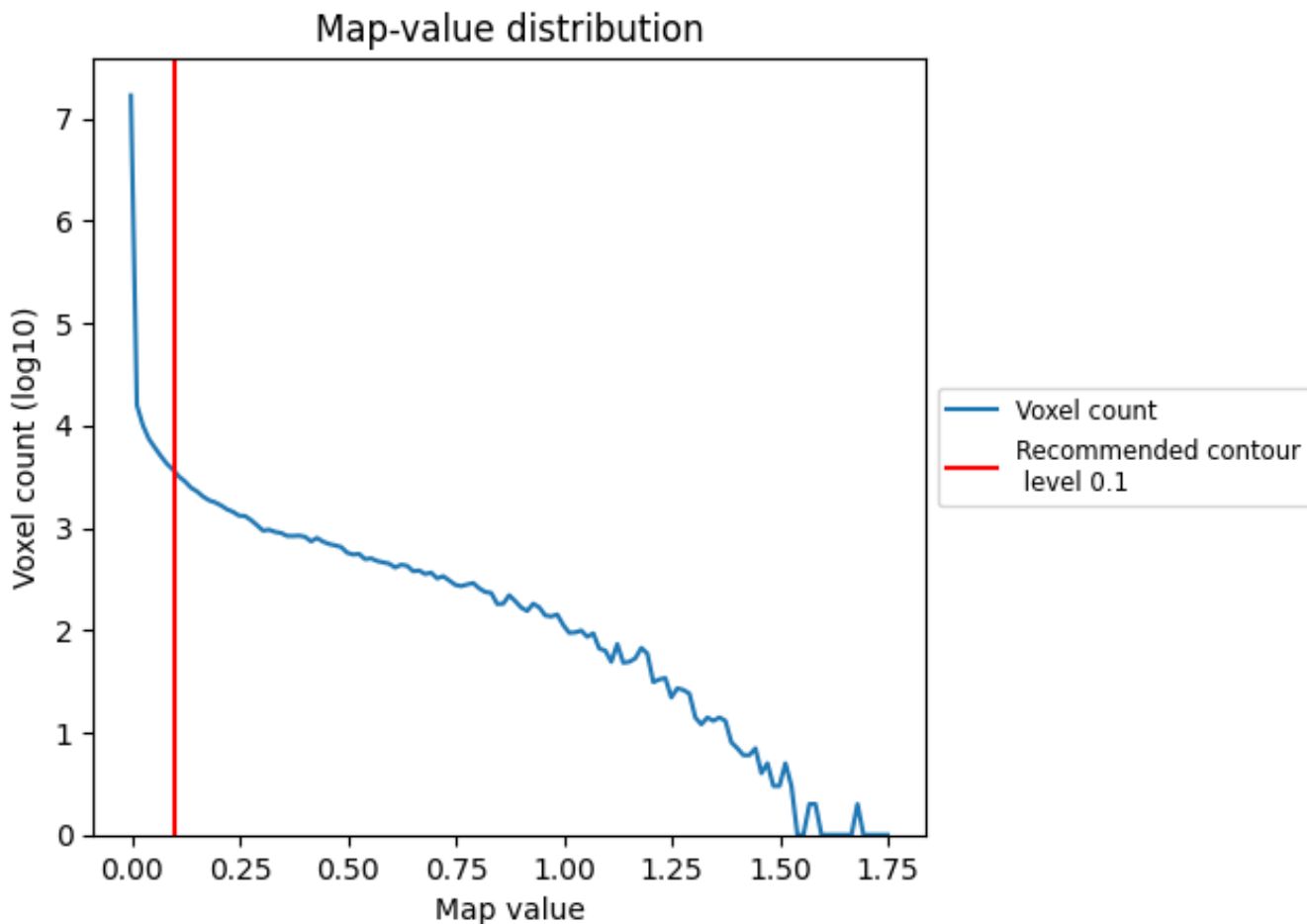
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

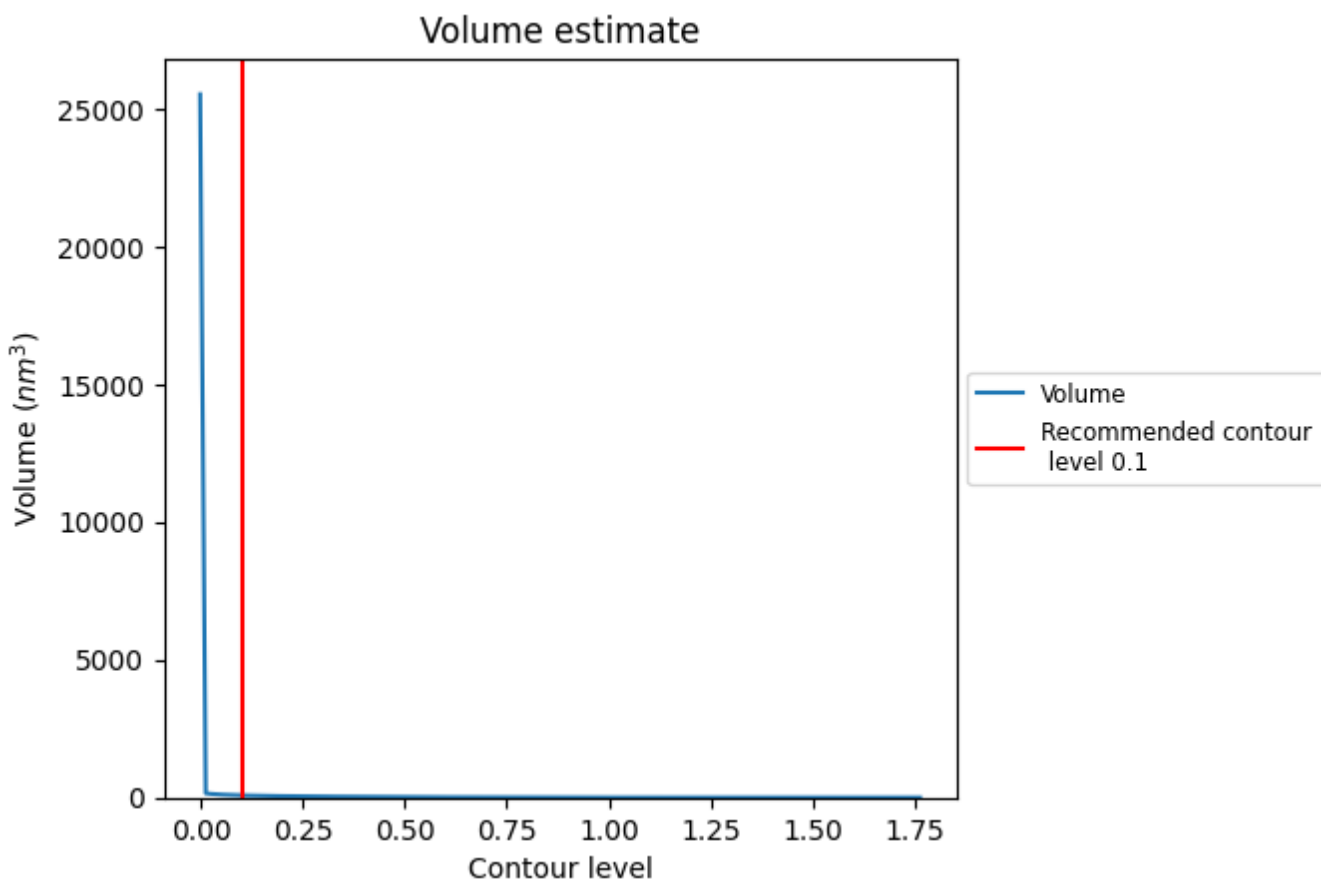
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

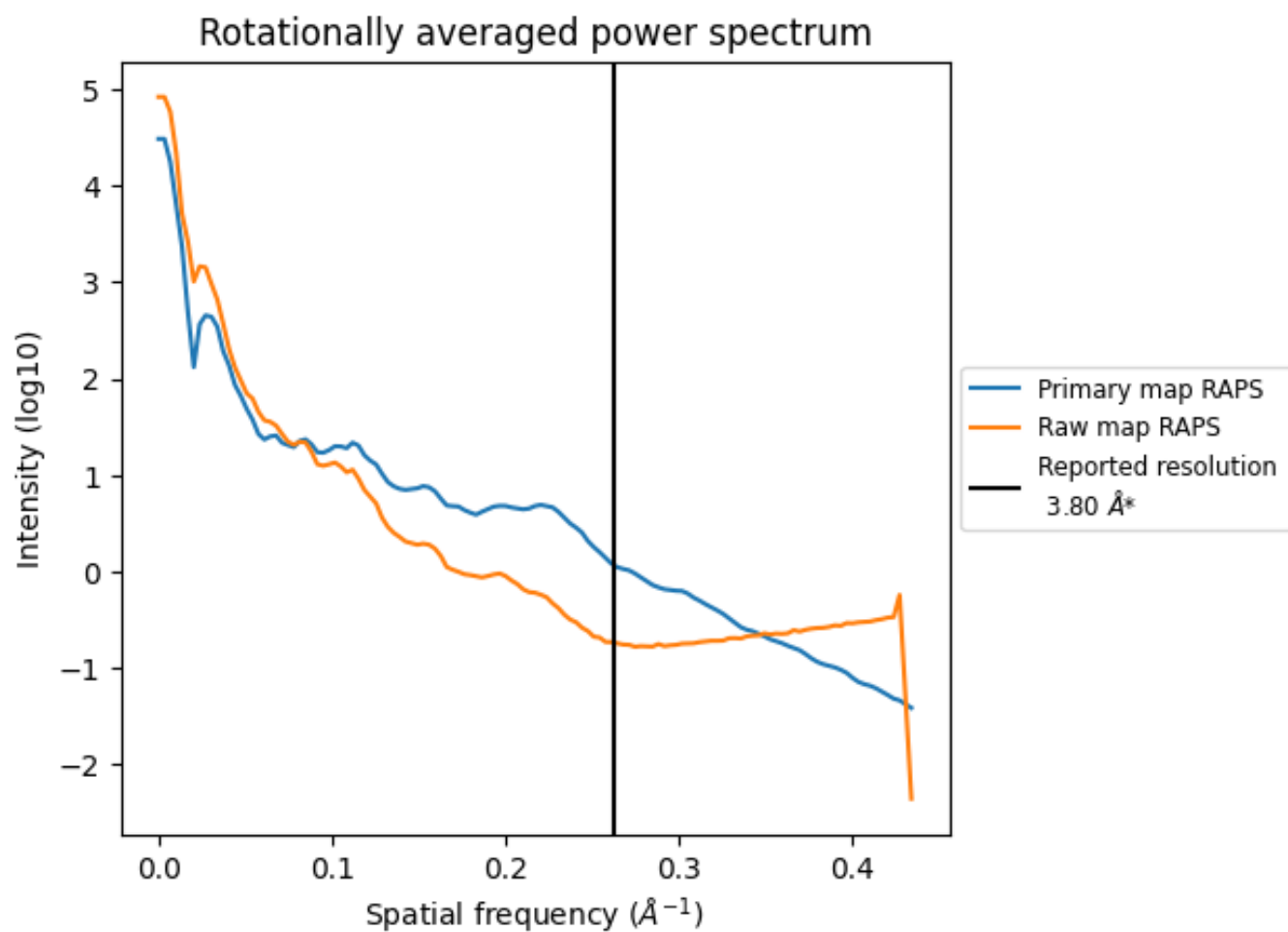
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 80 nm<sup>3</sup>; this corresponds to an approximate mass of 72 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum i

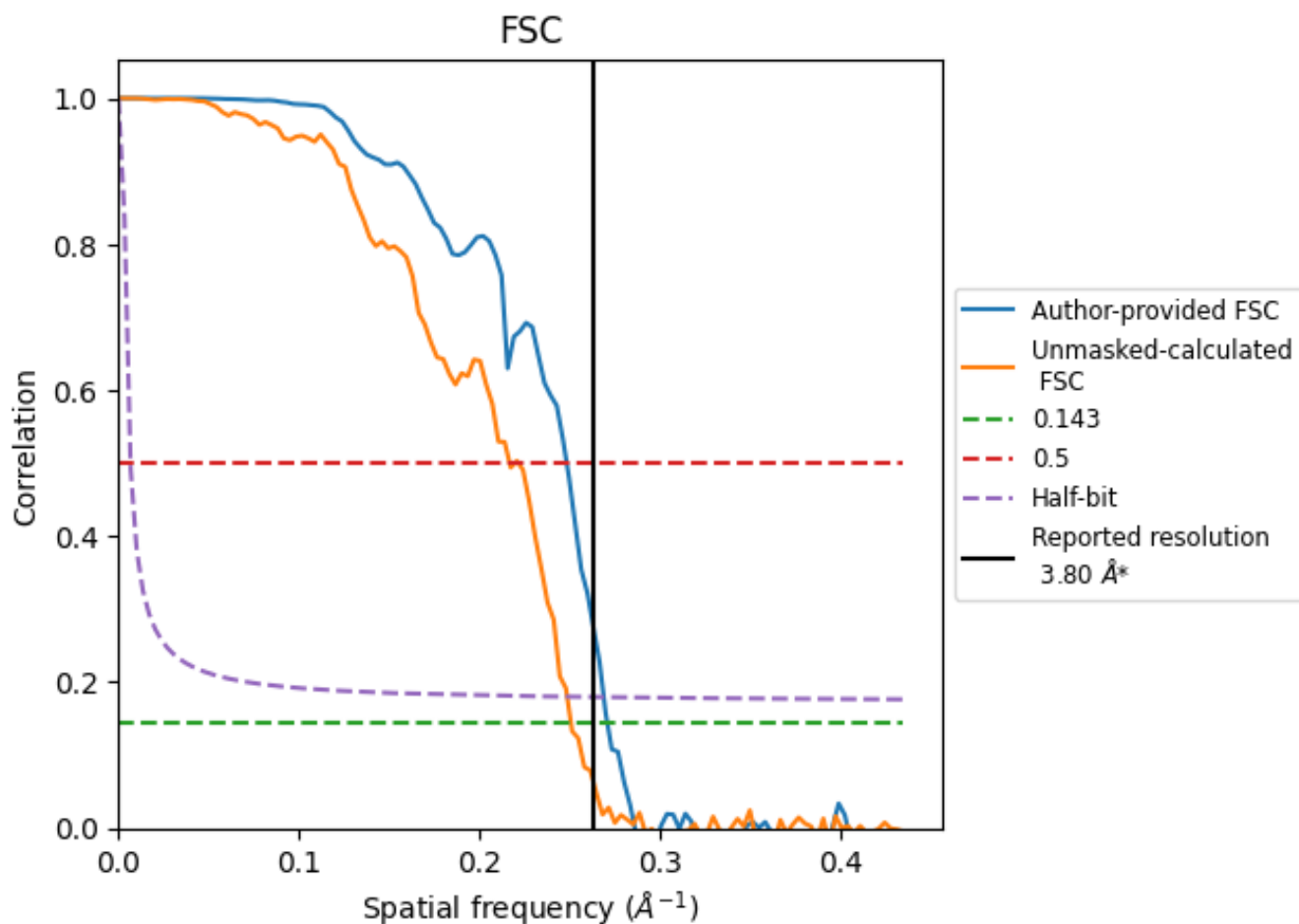


\*Reported resolution corresponds to spatial frequency of 0.263 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.263 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

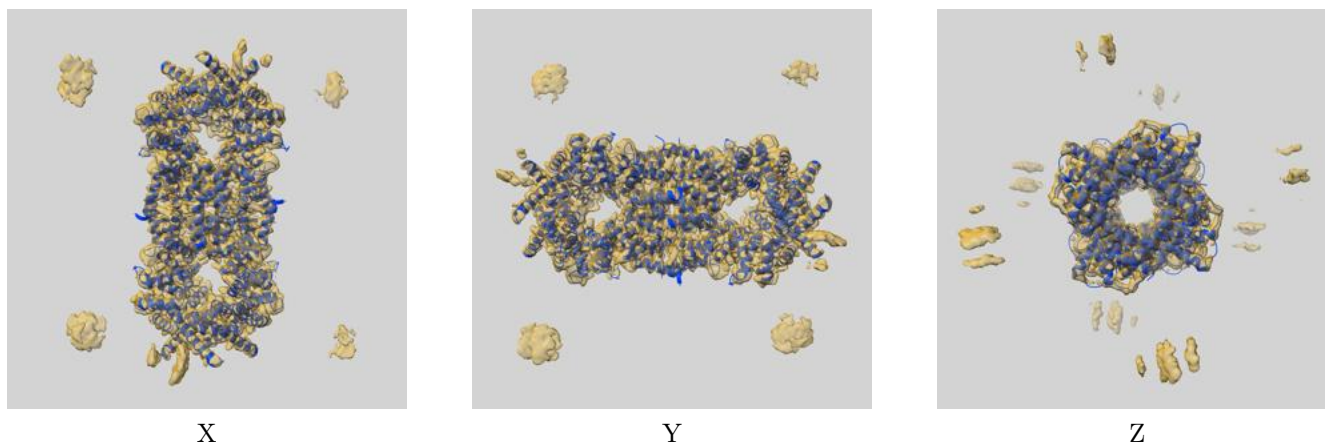
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	3.69	4.03	3.72
Unmasked-calculated*	3.99	4.61	4.02

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

## 9 Map-model fit [i](#)

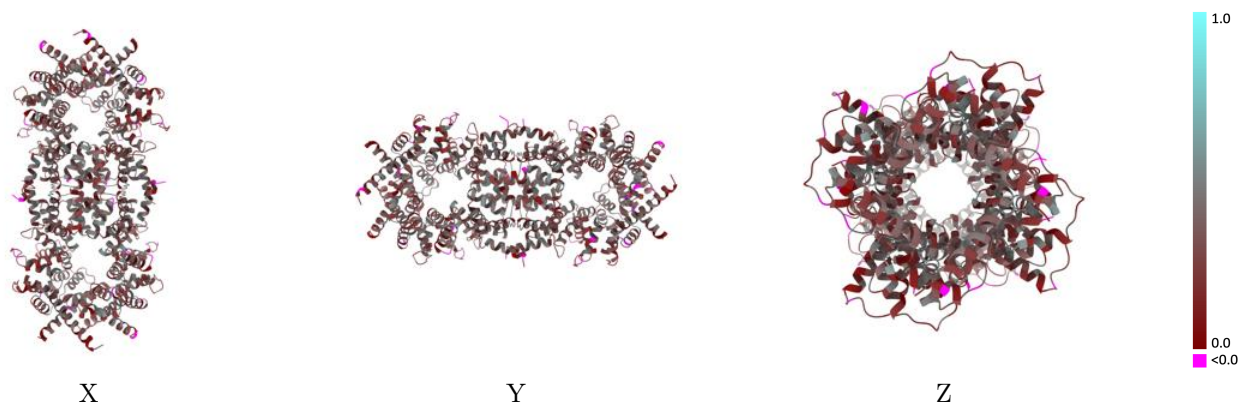
This section contains information regarding the fit between EMDB map EMD-27269 and PDB model 8D9X. Per-residue inclusion information can be found in section 3 on page 9.

### 9.1 Map-model overlay [i](#)



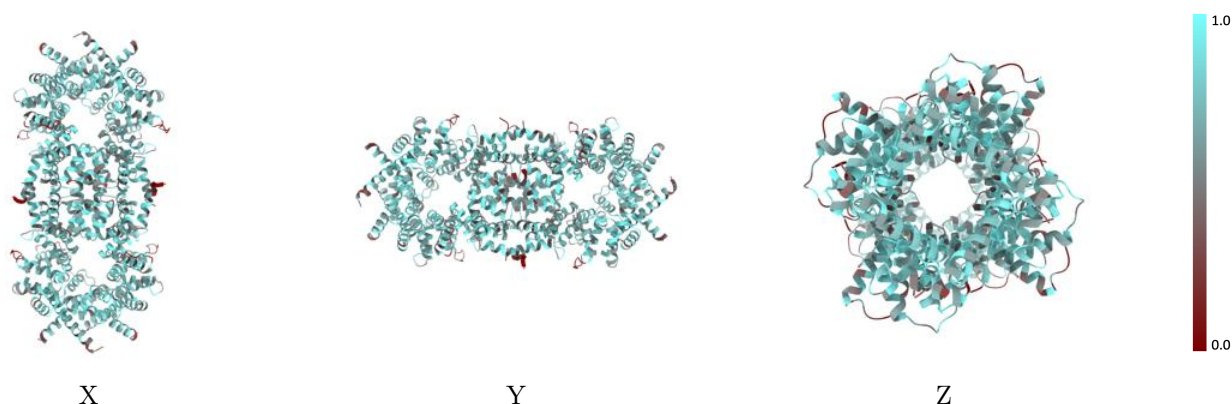
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



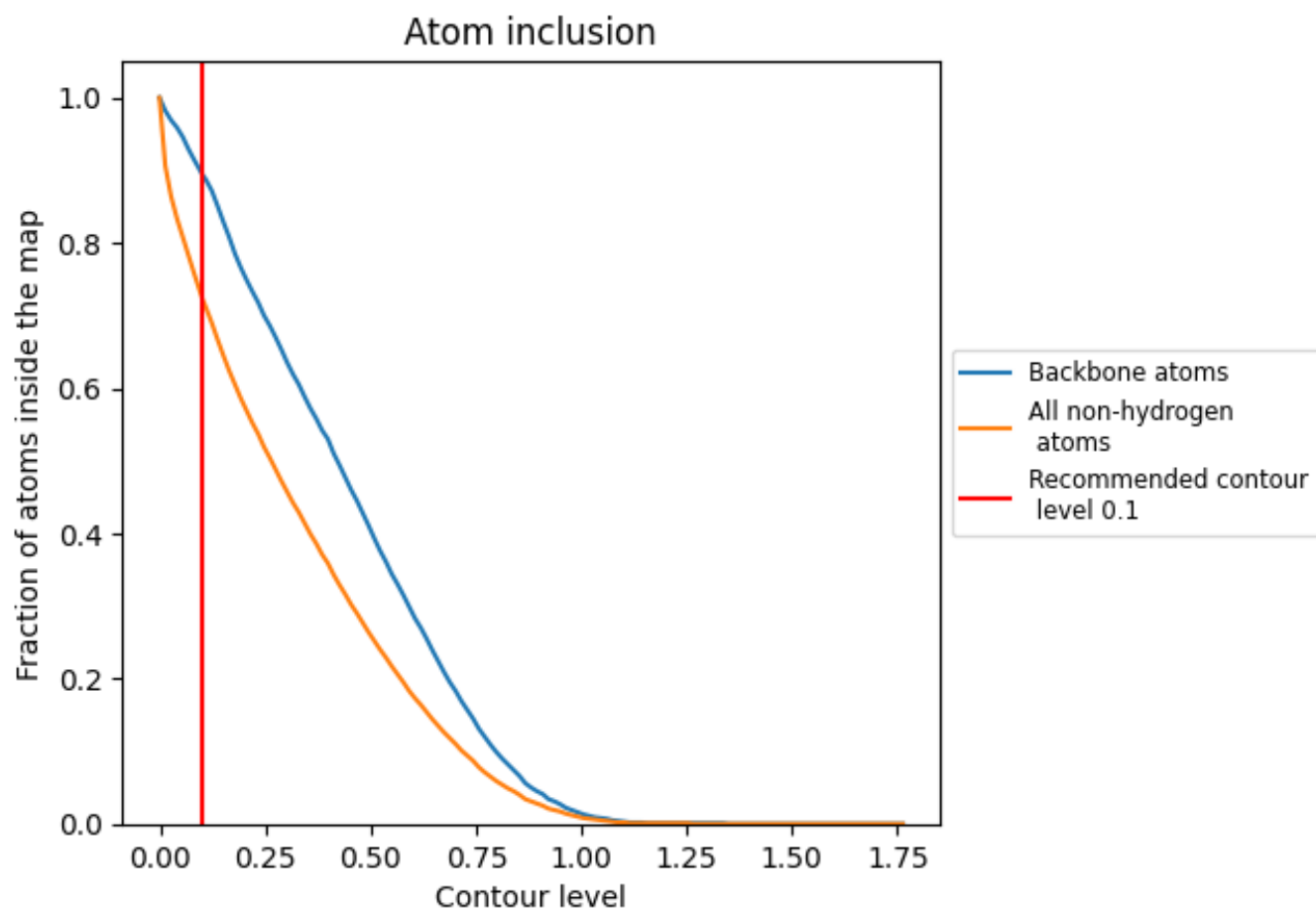
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

## 9.4 Atom inclusion [i](#)





















At the recommended contour level, 89% of all backbone atoms, 72% of all non-hydrogen atoms, are inside the map.



## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7230	 0.3260
A	 0.7240	 0.3240
B	 0.7240	 0.3270
C	 0.7200	 0.3260
D	 0.7100	 0.3220
E	 0.7290	 0.3270
F	 0.7210	 0.3250
G	 0.7260	 0.3250
H	 0.7280	 0.3280

